



|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 387 | ATA | AAT | GGT | ATC | AAA | GAT | GCA | AGG | AAG | GTC | ACT | GTA | GGT | GTG | ATT | GGA | AGT | GGA | 432 |
|     | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | I   | N   | G   | I   | K   | D   | A   | R   | K   | V   | T   | V   | G   | V   | I   | G   | S   | G   |     |
| 441 | GAT | TTT | GCC | AAA | TCC | TTC | ACC | ATT | CGA | CTT | ATT | AGA | TGC | GGC | TAT | CAT | GTG | GTG | 486 |
|     | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | D   | F   | A   | K   | S   | L   | T   | I   | R   | L   | I   | R   | C   | G   | Y   | H   | V   | V   |     |
| 495 | ATA | GGA | AGT | AGA | AAT | CCT | AAG | TTT | GCT | TCT | GAA | TTT | TTT | CCT | CAT | GTG | GTA | GAT | 540 |
|     | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | I   | G   | S   | R   | N   | P   | K   | F   | A   | S   | E   | F   | F   | F   | H   | V   | V   | D   |     |
| 549 | GTC | ACT | CAT | CAT | GAA | GAT | GCT | CTC | ACA | AAA | ACA | AAT | ATA | ATA | TTT | GTT | GCT | ATA | 594 |
|     | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | V   | T   | H   | H   | E   | D   | A   | L   | T   | K   | T   | N   | I   | I   | F   | V   | A   | I   |     |
| 603 | CAC | AGA | GAA | CAT | TAT | ACC | TCC | CTG | TGG | GAC | CTG | AGA | CAT | CTG | CTT | GTG | GGT | AAA | 648 |
|     | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|     | H   | R   | E   | H   | Y   | T   | S   | L   | W   | D   | L   | R   | H   | L   | L   | V   | G   | K   |     |

FIGURE 1B

[illegible]

FIGURE 1C

|      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 927  | GAA | AAT | TTA | CCC | CTA | CGA | CTC | TTT | ACT | CTC | TGG | AGA | GGG | CCA | GTG | GTG | GTA | GCT | 972  |
|      | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---  |
|      | E   | N   | L   | P   | L   | R   | L   | F   | T   | L   | W   | R   | G   | P   | V   | V   | V   | A   |      |
| 981  | ATA | AGC | TTG | GCC | ACA | TTT | TTT | TTC | CTT | TAT | TCC | TTT | CTC | AGA | GAT | GTG | ATT | CAT | 1026 |
|      | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---  |
|      | I   | S   | L   | A   | T   | F   | F   | F   | L   | Y   | S   | F   | V   | R   | D   | V   | I   | H   |      |
| 1035 | CCA | TAT | GCT | AGA | AAC | CAA | CAG | AGT | GAC | TTT | TAC | AAA | ATT | CCT | ATA | GAG | ATT | GTG | 1080 |
|      | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---  |
|      | P   | Y   | A   | R   | N   | Q   | Q   | S   | D   | F   | Y   | K   | I   | P   | I   | E   | I   | V   |      |
| 1089 | AAT | AAA | ACC | TTA | CCT | ATA | GTT | GCC | ATT | ACT | TTG | CTC | TCC | CTA | GTA | TAC | CTC | GCA | 1134 |
|      | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---  |
|      | N   | K   | T   | L   | P   | I   | V   | A   | I   | T   | L   | L   | S   | L   | V   | Y   | L   | A   |      |
| 1143 | GGT | CTT | CTG | GCA | GCT | GCT | TAT | CAA | CTT | TAT | TAC | GGC | ACC | AAG | TAT | AGG | AGA | TTT | 1188 |
|      | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---  |
|      | G   | L   | L   | A   | A   | A   | Y   | Q   | L   | Y   | Y   | G   | T   | K   | Y   | R   | R   | F   |      |

FIGURE 1D

|   |      |      |      |      |      |
|---|------|------|------|------|------|
| 1197  | 1206 | 1215 | 1224 | 1233 | 1242 |
| CCA CCT TGG TTG GAA ACC TGG TTA CAG TGT AGA AAA CAG CTT GGA TTA CTA AGT |      |      |      |      |      |
| P P W L E T W L Q C R K Q L G L L S                                     |      |      |      |      |      |
| 1251  | 1260 | 1269 | 1278 | 1287 | 1296 |
| TTT TTC TTC GCT ATG GTC CAT GTT GCC TAC AGC CTC TGC TTA CCG ATG AGA AGG |      |      |      |      |      |
| F F F A M V H V A Y S L C L P M R R                                     |      |      |      |      |      |
| 1305  | 1314 | 1323 | 1332 | 1341 | 1350 |
| TCA GAG AGA TAT TTG TTT CTC AAC ATG GCT TAT CAG CAG GTT CAT GCA AAT ATT |      |      |      |      |      |
| S E R Y L F L N M A Y Q Q V H A N I                                     |      |      |      |      |      |
| 1359  | 1368 | 1377 | 1386 | 1395 | 1404 |
| GAA AAC TCT TGG AAT GAG GAA GAA GTT TGG AGA ATT GAA ATG TAT ATC TCC TTT |      |      |      |      |      |
| E N S W N E E E V W R I E M Y I S F                                     |      |      |      |      |      |
| 1413  | 1422 | 1431 | 1440 | 1449 | 1458 |
| GGC ATA ATG AGC CTT GGC TTA CTT TCC CTC CTG GCA GTC ACT TCT ATC CCT TCA |      |      |      |      |      |
| G I M S L G L L S L L A V T S I P S                                     |      |      |      |      |      |

FIGURE 1E

|      |             |      |             |      |             |      |             |      |             |      |             |
|------|-------------|------|-------------|------|-------------|------|-------------|------|-------------|------|-------------|
| 1467 | GTG AGC AAT | 1476 | GCT TTA AAC | 1485 | TGG AGA GAA | 1494 | TTC AGT TTT | 1503 | ATT CAG TCT | 1512 | ACA CTT GGA |
| ---  | ---         | ---  | ---         | ---  | ---         | ---  | ---         | ---  | ---         | ---  |             |
| ---  | V S N A L   | ---  | N W R E F   | ---  | S S F I Q   | ---  | S T L G     | ---  | ---         | ---  |             |
| 1521 | TAT GTC GCT | 1530 | CTC ATA AGT | 1539 | ACT TTC CAT | 1548 | GTT TTA ATT | 1557 | TAT GGA TGG | 1566 | AAA CGA     |
| ---  | ---         | ---  | ---         | ---  | ---         | ---  | ---         | ---  | ---         | ---  |             |
| ---  | Y V A L L   | ---  | I S T F H   | ---  | V L I Y G   | ---  | W K R       | ---  | ---         | ---  |             |
| 1575 | GCT TTT GAG | 1584 | GAG TAC     | 1593 | TAT TTT TAT | 1602 | ACA CCA AAC | 1611 | TTT GTT     | 1620 | CTT GCT     |
| ---  | ---         | ---  | ---         | ---  | ---         | ---  | ---         | ---  | ---         | ---  |             |
| ---  | A F E E E   | ---  | Y Y R F Y   | ---  | T T P P N   | ---  | F V L A     | ---  | ---         | ---  |             |
| 1629 | CTT GTT TTG | 1638 | TCA ATT GTA | 1647 | ATT CTG GGT | 1656 | AAG ATT ATT | 1665 | TTA TTC     | 1674 | CTT CCA TGT |
| ---  | ---         | ---  | ---         | ---  | ---         | ---  | ---         | ---  | ---         | ---  |             |
| ---  | L V L P S   | ---  | I I V I L   | ---  | G K I I L   | ---  | F L P C     | ---  | ---         | ---  |             |
| 1683 | ATA AGC CGA | 1692 | CTA AAA CGA | 1701 | ATT AAA AAA | 1710 | GGC TGG GAA | 1719 | AAG AGC CAA | 1728 | TTT CTG     |
| ---  | ---         | ---  | ---         | ---  | ---         | ---  | ---         | ---  | ---         | ---  |             |
| ---  | I S R R K   | ---  | L K R I K   | ---  | K G W E K   | ---  | S Q F L     | ---  | ---         | ---  |             |

FIGURE 1F

|      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| 1737 | GAA | GGT | ATT | GGA | GGA | ACA | ATT | CCT | CAT | GTC | TCC | CCG | GAG | AGG | GTC | ACA | GTA | 1782 |      |
| ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---  |      |
|      | E   | E   | G   | I   | G   | G   | I   | P   | H   | V   | S   | P   | E   | R   | V   | T   | V   |      |      |
| 1791 | ATG | TGA | TAA | ATG | GTG | TTC | ACA | GCT | GCC | ATA | TAA | AGT | TCT | ACT | CAT | GCC | ATT | 1836 |      |
| ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---  |      |
|      | M   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |
| 1845 | ATT | TTT | ATG | ACT | TCT | ACG | TTC | AGT | TAC | AAG | TAT | GCT | GTC | AAA | TTA | TCG | TGG | GTT  | 1890 |
| ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---  | ---  |
|      | GA  | 3'  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |      |
| ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---  | ---  |

FIGURE 1G

|     |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |          |         |          |          |
|-----|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|---------|----------|----------|
| 1   | MES | I | S | M | G | S | P | K | S | L | S | E | T | C | L | P | N | G | I | N | G | I | K | D | A | R | K | 7492448  |         |          |          |
| 1   | MES | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | R | K | g6572948 |         |          |          |
| 31  | V   | T | V | G | V | I | G | S | G | D | F | A | K | S | L | T | I | R | L | I | R | C | G | Y | H | V | V | I        | G       | S        | 7492448  |
| 6   | -   | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -        | -       | g6572948 |          |
| 61  | R   | N | P | K | F | A | S | E | F | F | H | V | V | D | V | T | H | H | E | D | A | L | T | K | T | N | I | I        | F       | 7492448  |          |
| 6   | -   | - | - | - | - | - | - | - | - | - | - | - | - | D | I | T | N | Q | E | E | - | - | - | - | - | - | - | -        | -       | g6572948 |          |
| 91  | V   | A | I | H | R | E | H | Y | T | S | L | W | D | L | R | H | L | L | V | G | K | I | L | I | D | V | S | N        | N       | M        | 7492448  |
| 13  | -   | - | - | - | - | - | - | - | - | - | L | W | K | M | K | P | - | - | - | - | - | - | - | - | - | - | R | R        | N       | L        | g6572948 |
| 121 | R   | I | N | Q | Y | P | E | S | N | A | E | Y | L | A | S | L | F | P | D | S | L | I | V | K | G | F | N | V        | V       | S        | 7492448  |
| 23  | E   | E | D | D | Y | L | H | K | D | T | G | - | E | T | S | M | L | K | R | P | V | L | - | - | - | - | - | -        | -       | -        | g6572948 |
| 151 | A   | W | A | L | Q | L | G | P | K | D | A | S | R | Q | V | Y | I | C | S | N | N | I | Q | A | R | Q | V | I        | E       | 7492448  |          |
| 44  | -   | - | - | - | L | H | L | - | H | Q | T | A | H | A | D | E | F | D | C | P | S | E | L | Q | H | T | Q | E        | -       | -        | g6572948 |
| 181 | L   | A | R | Q | L | N | F | I | P | I | D | L | G | S | L | S | A | R | E | I | E | N | L | P | L | R | L | F        | T       | 7492448  |          |
| 67  | -   | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | L | F        | P       | g6572948 |          |
| 211 | L   | W | R | G | P | V | V | A | I | S | L | A | T | F | F | L | Y | S | F | V | R | D | V | I | H | P | Y | A        | 7492448 |          |          |
| 70  | Q   | W | H | L | P | I | K | I | A | A | I | A | S | L | T | F | L | Y | T | L | R | R | E | V | I | H | P | L        | A       | g6572948 |          |

FIGURE 2A



241 R N Q Q S D F Y K I P I E I V N K T L P I V A I T L L S L V 7492448  
 100 T S H Q Q Y F Y K I P I L V I N K V L P M V S I T L L A L V 96572948

271 Y L A G L L A A A Y Q L Y Y G T K Y R R F P P W L E T W L Q 7492448  
 130 Y L P G V I A A I V Q L H N G T K Y K K F P H W L D K W M L 96572948

301 C R K Q L G L L S F F F A M V H V A Y S L C L P M R R S E R 7492448  
 160 T R K Q F G L L S F F F A V L H A I Y S L S Y P M R R S Y R 96572948

331 Y L F L N M A Y Q Q V H A N I E N S W N E E E V W R I E M Y 7492448  
 190 Y K L L N W A Y Q Q V Q Q N K E D A W I E H D V W R M E I Y 96572948

361 I S F G I M S L G L L S L L A V T S I P S V S N A L N W R E 7492448  
 220 V S L G I V G L A I L A L L A V T S I P S V S D S L T W R E 96572948

391 F S F I Q S T L G Y V A L L I S T F H V L I Y G W K R A F E 7492448  
 250 F H Y I Q S K L G I V S L L G T I H A L I F A W N K W I D 96572948

421 E E Y Y R F Y T P P N F V L A L V L P S I V I L G K I I L F 7492448  
 280 I K Q F V W Y T P P T F M I A V F L P I V V L I F K S I L F 96572948

FIGURE 2B

12345678901234567890

|     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |         |          |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---------|----------|
| 451 | L | P | C | I | S | R | K | L | K | R | I | K | K | G | W | E | K | S | Q | F | L | E | E | G | I | G | G | T | I | P | 7492448 |          |
| 310 | L | P | C | L | R | K | K | I | L | K | I | R | H | G | W | E | D | - | - | - | - | - | - | - | - | - | - | - | - | V | T       | g6572948 |
| 481 | H | V | S | P | E | R | V | - | T | V | M |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |         | 7492448  |
| 329 | K | I | N | K | T | E | I | C | S | Q | L |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |         | g6572948 |

FIGURE 2C